

## Volume Sensor for Flexible Fluid Reservoirs in Microgravity, Phase I

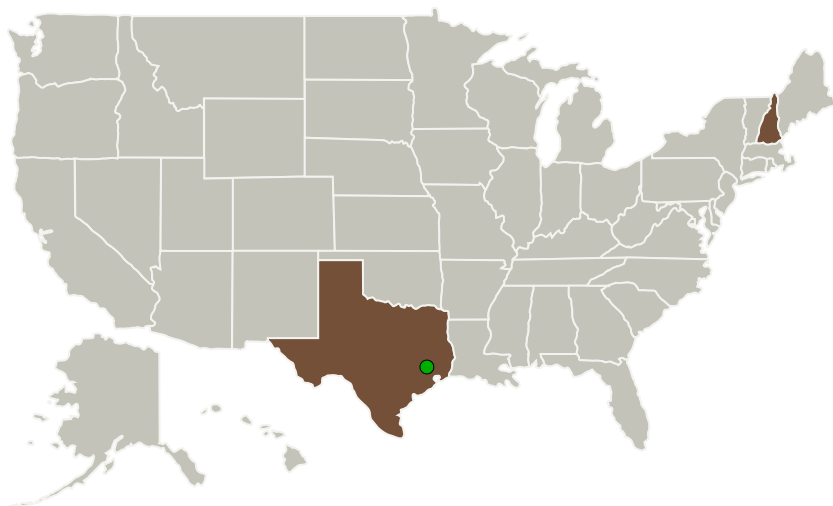
Completed Technology Project (2017 - 2018)




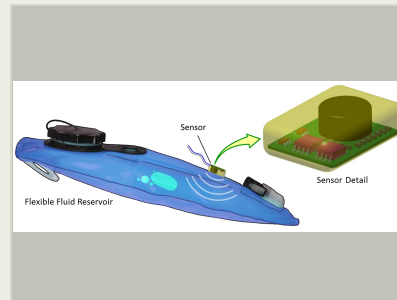
## Project Introduction

The Advanced Space Suit carries consumable cooling water maintained at ambient pressure within a soft-walled, flexible reservoir. To ensure uninterrupted thermal control it is critical to monitor the volume of water remaining, but no known sensor is suitable for this task. Existing measurement techniques are unacceptably sensitive to the motion and varying geometry of the reservoir in micro-gravity, or to electromagnetic interference within the suit environment. We will develop a simple, compact, low power sensor that accurately measures the volume of fluid in any soft-walled bladder. Our innovative sensing technique will provide an accurate measurement that is insensitive to gravity, the motion, and geometry of the reservoir, the presence of air, and electromagnetic interference.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Creare LLC	Lead Organization	Industry	Hanover, New Hampshire
Dartmouth College	Supporting Organization	Academia	Hanover, New Hampshire
 Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

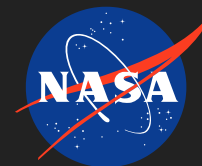


Volume Sensor for Flexible Fluid Reservoirs in Microgravity, Phase I Briefing Chart Image

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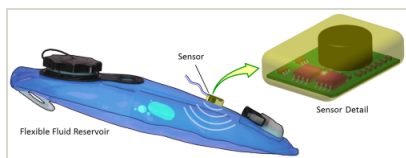
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## Primary U.S. Work Locations

New Hampshire

Texas

## Images



### Briefing Chart Image

Volume Sensor for Flexible Fluid Reservoirs in Microgravity, Phase I Briefing Chart Image

(<https://techport.nasa.gov/image/132214>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Creare LLC

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

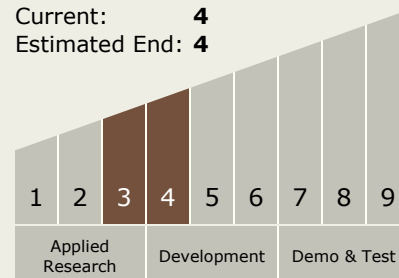
Carlos Torrez

### Principal Investigator:

Marc Ramsey

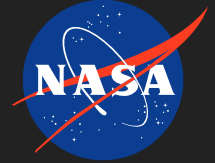
## Technology Maturity (TRL)

Start: 3  
Current: 4  
Estimated End: 4



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## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.2 Extravehicular Activity Systems
    - └ TX06.2.2 Portable Life Support System

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System